

#7
RECEIVED

SEP 19 2000

TECH CENTER 1600/2000

SEQUENCE LISTING

<110> Anthony Rosen
 Donald W. Nicholson
 Livia Casciola-Rosen
 Felipe A. Andrade
 Sophie Roy
 Nancy A. Thornberry

 <120> AUTOANTIGENIC FRAGMENTS, METHODS AND
 ASSAYS

 <130> 20221Y

 <140> 09/296,662
 <141> 1999-04-22

 <150> 60/000,060
 <151> 2000-04-22

 <160> 37

 <170> FastSEQ for Windows Version 4.0

 <210> 1
 <211> 4
 <212> PRT
 <213> Human

 <400> 1
 Asp Glu Val Asp
 1

 <210> 2
 <211> 4
 <212> PRT
 <213> Human

 <400> 2
 Ile Glu Ala Asp
 1

 <210> 3
 <211> 5
 <212> PRT
 <213> Human

 <400> 3
 Val Ala Thr Asp Ala
 1 5

 <210> 4
 <211> 5
 <212> PRT
 <213> Human

 <400> 4
 Val Asp Pro Asp Tyr
 1 5

 <210> 5

RECEIVED

SEP 21 2000

TECH CENTER 1600/2000

INS
X1

AP1

<211> 5
<212> PRT
<213> Human

<400> 5
Leu Glu Glu Asp Ala
1 5

<210> 6
<211> 5
<212> PRT
<213> Human

<400> 6
Leu Thr Pro Asp Lys
1 5

xi

<210> 7
<211> 5
<212> PRT
<213> Human

<400> 7
Val Gly Pro Asp Gly
1 5

xix

<210> 8
<211> 5
<212> PRT
<213> Human

<400> 8
Val Asp Pro Asp Ser
1 5

<210> 9
<211> 5
<212> PRT
<213> Human

<400> 9
Leu Gly Asn Asp Ser
1 5

<210> 10
<211> 5
<212> PRT
<213> Human

<400> 10
Val Glu Lys Asp Ser
1 5

<210> 11
<211> 5
<212> PRT
<213> Human

<400> 11
Val Thr Pro Asp Gln
1 5

1

<210> 12
<211> 5
<212> PRT
<213> Human

<400> 12
Leu Gly Pro Asp Glu
1 5

<210> 13
<211> 5
<212> PRT
<213> Human

<400> 13
Val Ala Pro Asp Arg
1 5

<210> 14
<211> 5
<212> PRT
<213> Human

AF1

<400> 14
Ile Cys Pro Asp Met
1 5

<210> 15
<211> 5
<212> PRT
<213> Human

<400> 15
Val Cys Thr Asp Lys
1 5

<210> 16
<211> 5
<212> PRT
<213> Human

<400> 16
Val Glu Gln Asp Met
1 5

<210> 17
<211> 5
<212> PRT
<213> Human

<400> 17
Val Asp Ser Asp Glu
1 5

<210> 18
<211> 5
<212> PRT
<213> Human

<400> 18
Ile Thr Pro Asp Pro
1 5

<210> 19
<211> 5
<212> PRT
<213> Human

<400> 19
Val Thr Pro Asp Pro
1 5

INS
F1
AA

<210> 20
<211> 5
<212> PRT
<213> Human

<400> 20
Ile Ser Ser Asp Arg
1 5

<210> 21
<211> 4
<212> PRT
<213> Human

<400> 21
Ile Cys Thr Asp
1

<210> 22
<211> 4
<212> PRT
<213> Human

<400> 22
Val Asp Val Asp
1

<210> 23
<211> 4
<212> PRT
<213> Human

<400> 23
Ser Glu Val Asp
1

<210> 24
<211> 5
<212> PRT
<213> Human

<400> 24
Val Gly Pro Asp Phe
1 5

<210> 25
<211> 5
<212> PRT
<213> Human

<400> 25
Asp Glu Val Asp Asn

<210> 26
<211> 4
<212> PRT
<213> Human

<400> 26
Tyr Val Ala Asp

<210> 27
<211> 5
<212> PRT
<213> Human

<400> 27
Val Gly Pro Asp Ser

<210> 28
<211> 4
<212> PRT
<213> Human

<400> 28
Ile Glu Thr Asp

<210> 29
<211> 5
<212> PRT
<213> Human

<400> 29
Val Asp Gln Asp Gly

<210> 30
<211> 5
<212> PRT
<213> Human

<400> 30
Val Leu Gly Asp Val

<210> 31
<211> 5
<212> PRT
<213> Human

<400> 31
Asp Trp Val Asp Gly

<210> 32
<211> 2101
<212> PRT
<213> Human

<400> 32

INS
F1

AX1

Met Thr Leu His Ala Thr Arg Gly Ala Ala Leu Leu Ser Trp Val Asn
 5 10 15
 Ser Leu His Val Ala Asp Pro Val Glu Ala Val Leu Gln Leu Gln Asp
 20 25 30
 Cys Ser Ile Phe Ile Lys Ile Ile Asp Arg Ile His Gly Thr Glu Glu
 35 40 45
 Gly Gln Ile Leu Lys Gln Pro Val Ser Glu Arg Leu Asp Phe Val
 50 55 60
 Cys Ser Phe Leu Gln Lys Asn Arg Lys His Pro Ser Ser Pro Glu Cys
 65 70 75 80
 Leu Val Ser Ala Gln Lys Val Leu Glu Gly Ser Glu Leu Glu Leu Ala
 85 90 95
 Lys Met Thr Met Leu Leu Leu Tyr His Ser Thr Met Ser Ser Lys Ser
 100 105 110
 Pro Arg Asp Trp Glu Gln Phe Glu Tyr Lys Ile Gln Ala Glu Leu Ala
 115 120 125
 Val Ile Leu Lys Phe Val Leu Asp His Glu Asp Gly Leu Asn Leu Asn
 130 135 140
 Glu Asp Leu Glu Asn Phe Leu Gln Lys Ala Pro Val Pro Ser Thr Cys
 145 150 155 160
 Ser Ser Thr Phe Pro Glu Glu Leu Ser Pro Pro Ser His Gln Ala Lys
 165 170 175
 Arg Glu Ile Arg Phe Leu Glu Leu Gln Lys Val Ala Ser Ser Ser Ser
 180 185 190
 Gly Asn Asn Phe Leu Ser Gly Ser Pro Ala Ser Pro Met Gly Asp Ile
 195 200 205
 Leu Gln Thr Pro Gln Phe Gln Met Arg Arg Leu Lys Lys Gln Leu Ala
 210 215 220
 Asp Glu Arg Ser Asn Arg Asp Glu Leu Glu Leu Glu Leu Ala Glu Asn
 225 230 235 240
 Arg Lys Leu Leu Thr Glu Lys Asp Ala Gln Ile Ala Met Met Gln Gln
 245 250 255
 Arg Ile Asp Arg Leu Ala Leu Leu Asn Glu Lys Gln Ala Ala Ser Pro
 260 265 270
 Leu Glu Pro Lys Glu Leu Glu Leu Arg Asp Lys Asn Glu Ser Leu
 275 280 285
 Thr Met Arg Leu His Glu Thr Leu Lys Gln Cys Gln Asp Leu Lys Thr
 290 295 300
 Glu Lys Ser Gln Met Asp Arg Lys Ile Asn Gln Leu Ser Glu Glu Asn
 305 310 315 320
 Gly Asp Leu Ser Phe Lys Leu Arg Glu Phe Ala Ser His Leu Gln Gln
 325 330 335
 Leu Gln Asp Ala Leu Asn Glu Leu Thr Glu Glu His Ser Lys Ala Thr
 340 345 350
 Gln Glu Trp Leu Glu Lys Gln Ala Gln Leu Glu Lys Glu Leu Ser Ala
 355 360 365
 Ala Leu Gln Asp Lys Lys Cys Leu Glu Glu Lys Asn Gln Ile Leu Gln
 370 375 380
 Gly Lys Leu Ser Gln Leu Glu Glu His Leu Ser Gln Leu Gln Asp Asn
 385 390 395 400
 Pro Pro Gln Glu Lys Gly Glu Val Leu Gly Asp Val Leu Gln Leu Glu
 405 410 415
 Thr Leu Lys Gln Glu Ala Ala Thr Leu Ala Ala Asn Asn Thr Gln Leu
 420 425 430
 Gln Ala Arg Val Glu Met Leu Glu Thr Glu Arg Gly Gln Gln Glu Ala
 435 440 445
 Lys Leu Leu Ala Glu Arg Gly His Phe Glu Glu Glu Lys Gln Gln Leu
 450 455 460
 Ser Ser Leu Ile Thr Asp Leu Gln Ser Ser Ile Ser Asn Leu Ser Gln
 465 470 475 480
 Ala Lys Glu Glu Leu Glu Gln Ala Ser Gln Ala His Gly Ala Arg Leu
 485 490 495

Thr Ala Gln Val Ala Ser Leu Thr Ser Glu Leu Thr Thr Leu Asn Ala
 500 505 510
 Thr Ile Gln Gln Gln Asp Gln Glu Leu Ala Gly Leu Lys Gln Gln Ala
 515 520 525
 Lys Glu Lys Gln Ala Gln Leu Ala Gln Thr Leu Gln Gln Gln Glu Gln
 530 535 540
 Ala Ser Gln Gly Leu Arg His Gln Val Glu Gln Leu Ser Ser Ser Leu
 545 550 555 560
 Lys Gln Lys Glu Gln Gln Leu Lys Glu Val Ala Glu Lys Gln Glu Ala
 565 570 575
 Thr Arg Gln Asp His Ala Gln Gln Leu Ala Thr Ala Ala Glu Glu Arg
 580 585 590
 Glu Ala Ser Leu Arg Glu Arg Asp Ala Ala Leu Lys Gln Leu Glu Ala
 595 600 605
 Leu Glu Lys Glu Lys Ala Ala Lys Leu Glu Ile Leu Gln Gln Gln Leu
 610 615 620
 Gln Val Ala Asn Glu Ala Arg Asp Ser Ala Gln Thr Ser Val Thr Gln
 625 630 635 640
 Ala Gln Arg Glu Lys Ala Glu Leu Ser Arg Lys Val Glu Glu Leu Gln
 645 650 655
 Ala Cys Val Glu Thr Ala Arg Gln Glu Gln His Glu Ala Gln Ala Gln
 660 665 670
 Val Ala Glu Leu Glu Leu Gln Leu Arg Ser Glu Gln Gln Lys Ala Thr
 675 680 685
 Glu Lys Glu Arg Val Ala Gln Glu Lys Asp Gln Leu Gln Glu Gln Leu
 690 695 700
 Gln Ala Leu Lys Glu Ser Leu Lys Val Thr Lys Gly Ser Leu Glu Glu
 705 710 715 720
 Glu Lys Arg Arg Ala Ala Asp Ala Leu Glu Glu Gln Gln Arg Cys Ile
 725 730 735
 Ser Glu Leu Lys Ala Glu Thr Arg Ser Leu Val Glu Gln His Lys Arg
 740 745 750
 Glu Arg Lys Glu Leu Glu Glu Glu Arg Ala Gly Arg Lys Gly Leu Glu
 755 760 765
 Ala Arg Leu Leu Gln Leu Gly Glu Ala His Gln Ala Glu Thr Glu Val
 770 775 780
 Leu Arg Arg Glu Leu Ala Glu Ala Met Ala Ala Gln His Thr Ala Glu
 785 790 795 800
 Ser Glu Cys Glu Gln Leu Val Lys Glu Val Ala Ala Trp Arg Asp Gly
 805 810 815
 Tyr Glu Asp Ser Gln Gln Glu Glu Ala Gln Tyr Gly Ala Met Phe Gln
 820 825 830
 Glu Gln Leu Met Thr Leu Lys Glu Glu Cys Glu Lys Ala Arg Gln Glu
 835 840 845
 Leu Gln Glu Ala Lys Glu Lys Val Ala Gly Ile Glu Ser His Ser Glu
 850 855 860
 Leu Gln Ile Ser Arg Gln Gln Asn Lys Leu Ala Glu Leu His Ala Asn
 865 870 875 880
 Leu Ala Arg Ala Leu Gln Gln Val Gln Glu Lys Glu Val Arg Ala Gln
 885 890 895
 Lys Leu Ala Asp Asp Leu Ser Thr Leu Gln Glu Lys Met Ala Ala Thr
 900 905 910
 Ser Lys Glu Val Ala Arg Leu Glu Thr Leu Val Arg Lys Ala Gly Glu
 915 920 925
 Gln Gln Glu Thr Ala Ser Arg Glu Leu Val Lys Glu Pro Ala Arg Ala
 930 935 940
 Gly Asp Arg Gln Pro Glu Trp Leu Glu Glu Gln Gln Gly Arg Gln Phe
 945 950 955 960
 Cys Ser Thr Gln Ala Ala Leu Gln Ala Met Glu Arg Glu Ala Glu Gln
 965 970 975
 Met Gly Asn Glu Leu Glu Arg Leu Arg Ala Ala Leu Met Glu Ser Gln
 980 985 990

Gly Gln Gln Gln Glu Glu Arg Gly Gln Gln Glu Arg Glu Val Ala Arg
 995 1000 1005
 Leu Thr Gln Glu Arg Gly Arg Ala Gln Ala Asp Leu Ala Leu Glu Lys
 1010 1015 1020
 Ala Ala Arg Ala Glu Leu Glu Met Arg Leu Gln Asn Ala Leu Asn Glu
 1025 1030 1035 1040
 Gln Arg Val Glu Phe Ala Thr Leu Gln Glu Ala Leu Ala His Ala Leu
 1045 1050 1055
 Thr Glu Lys Glu Gly Lys Asp Gln Glu Leu Ala Lys Leu Arg Gly Leu
 1060 1065 1070
 Glu Ala Ala Gln Ile Lys Glu Leu Glu Leu Arg Gln Thr Val Lys
 1075 1080 1085
 Gln Leu Lys Glu Gln Leu Ala Lys Lys Glu Lys Glu His Ala Ser Gly
 1090 1095 1100
 Ser Gly Ala Gln Ser Glu Ala Ala Gly Arg Thr Glu Pro Thr Gly Pro
 1105 1110 1115 1120
 Lys Leu Glu Ala Leu Arg Ala Glu Val Ser Lys Leu Glu Gln Gln Cys
 1125 1130 1135
 Gln Lys Gln Gln Glu Gln Ala Asp Ser Leu Glu Arg Ser Leu Glu Ala
 1140 1145 1150
 Glu Arg Ala Ser Arg Ala Glu Arg Asp Ser Ala Leu Glu Thr Leu Gln
 1155 1160 1165
 Gly Gln Leu Glu Glu Lys Ala Gln Glu Leu Gly His Ser Gln Ser Ala
 1170 1175 1180
 Leu Ala Ser Ala Gln Arg Glu Leu Ala Ala Phe Arg Thr Lys Val Gln
 1185 1190 1195 1200
 Asp His Ser Lys Ala Glu Asp Glu Trp Lys Ala Gln Val Ala Arg Gly
 1205 1210 1215
 Arg Gln Glu Ala Glu Arg Lys Asn Ser Leu Ile Ser Ser Leu Glu Glu
 1220 1225 1230
 Glu Val Ser Ile Leu Asn Arg Gln Val Leu Glu Lys Glu Gly Glu Ser
 1235 1240 1245
 Lys Glu Leu Lys Arg Leu Val Met Ala Glu Ser Glu Lys Ser Gln Lys
 1250 1255 1260
 Leu Glu Glu Ser Cys Ala Cys Cys Arg Gln Arg Gln Pro Ala Thr Val
 1265 1270 1275 1280
 Pro Glu Leu Gln Asn Ala Ala Leu Leu Cys Gly Arg Arg Cys Arg Ala
 1285 1290 1295
 Ser Gly Arg Glu Ala Glu Lys Gln Arg Val Ala Ser Glu Asn Leu Arg
 1300 1305 1310
 Gln Glu Leu Thr Ser Gln Ala Glu Arg Ala Glu Glu Leu Gly Gln Glu
 1315 1320 1325
 Leu Lys Ala Trp Gln Glu Lys Phe Phe Gln Lys Glu Gln Ala Leu Ser
 1330 1335 1340
 Thr Leu Gln Leu Glu His Thr Ser Thr Gln Ala Leu Val Ser Glu Leu
 1345 1350 1355 1360
 Leu Pro Ala Lys His Leu Cys Gln Gln Leu Gln Ala Glu Gln Ala Ala
 1365 1370 1375
 Ala Glu Lys Arg His Arg Glu Glu Leu Glu Gln Ser Lys Gln Ala Ala
 1380 1385 1390
 Gly Gly Leu Arg Ala Glu Leu Leu Arg Ala Gln Arg Glu Leu Gly Glu
 1395 1400 1405
 Leu Ile Pro Leu Arg Gln Lys Val Ala Glu Gln Glu Arg Thr Ala Gln
 1410 1415 1420
 Gln Leu Arg Ala Glu Lys Ala Ser Tyr Ala Glu Gln Leu Ser Met Leu
 1425 1430 1435 1440
 Lys Lys Ala His Gly Leu Leu Ala Glu Glu Asn Arg Gly Leu Gly Glu
 1445 1450 1455
 Arg Ala Asn Leu Gly Arg Gln Phe Leu Glu Val Glu Leu Asp Gln Ala
 1460 1465 1470
 Arg Glu Lys Tyr Val Gln Glu Leu Ala Ala Val Arg Ala Asp Ala Glu
 1475 1480 1485

Thr Arg Leu Ala Glu Val Gln Arg Glu Ala Gln Ser Thr Ala Arg Glu
 1490 1495 1500
 Leu Glu Val Met Thr Ala Lys Tyr Glu Gly Ala Lys Val Lys Val Leu
 1505 1510 1515 1520
 Glu Glu Arg Gln Arg Phe Gln Glu Glu Arg Gln Lys Leu Thr Ala Gln
 1525 1530 1535
 Val Glu Glu Leu Ser Lys Lys Leu Ala Asp Ser Asp Gln Ala Ser Lys
 1540 1545 1550
 Val Gln Gln Gln Lys Leu Lys Ala Val Gln Ala Gln Gly Gly Glu Ser
 1555 1560 1565
 Gln Gln Glu Ala Gln Arg Phe Gln Ala Gln Leu Asn Glu Leu Gln Ala
 1570 1575 1580
 Gln Leu Ser Gln Lys Glu Gln Ala Ala Glu His Tyr Lys Leu Gln Met
 1585 1590 1595 1600
 Glu Lys Ala Lys Thr His Tyr Asp Ala Lys Lys Gln Gln Asn Gln Glu
 1605 1610 1615
 Leu Gln Glu Gln Leu Arg Ser Leu Glu Gln Leu Gln Lys Glu Asn Lys
 1620 1625 1630
 Glu Leu Arg Ala Glu Ala Glu Arg Leu Gly His Glu Leu Gln Gln Ala
 1635 1640 1645
 Gly Leu Lys Thr Lys Glu Ala Glu Gln Thr Cys Arg His Leu Thr Ala
 1650 1655 1660
 Gln Val Arg Ser Leu Glu Ala Gln Val Ala His Ala Asp Gln Gln Leu
 1665 1670 1675 1680
 Arg Asp Leu Gly Lys Phe Gln Val Ala Thr Asp Ala Leu Lys Ser Arg
 1685 1690 1695
 Glu Pro Gln Ala Lys Pro Gln Leu Asp Leu Ser Ile Asp Ser Leu Asp
 1700 1705 1710
 Leu Ser Cys Glu Glu Gly Thr Pro Leu Ser Ile Thr Ser Lys Leu Pro
 1715 1720 1725
 Arg Thr Gln Pro Asp Gly Thr Ser Val Pro Gly Glu Pro Ala Ser Pro
 1730 1735 1740
 Ile Ser Gln Arg Leu Pro Pro Lys Val Glu Ser Leu Glu Ser Leu Tyr
 1745 1750 1755 1760
 Phe Thr Pro Ile Pro Ala Arg Ser Gln Ala Pro Leu Glu Ser Ser Leu
 1765 1770 1775
 Asp Ser Leu Gly Asp Val Phe Leu Asp Ser Gly Arg Lys Thr Arg Ser
 1780 1785 1790
 Ala Arg Arg Arg Thr Thr Gln Ile Ile Asn Ile Thr Met Thr Lys Lys
 1795 1800 1805
 Leu Asp Val Glu Glu Pro Asp Ser Ala Asn Ser Ser Phe Tyr Ser Thr
 1810 1815 1820
 Arg Ser Ala Pro Ala Ser Gln Ala Ser Leu Arg Ala Thr Ser Ser Thr
 1825 1830 1835 1840
 Gln Ser Leu Ala Arg Leu Gly Ser Pro Asp Tyr Gly Asn Ser Ala Leu
 1845 1850 1855
 Leu Ser Leu Pro Gly Tyr Arg Pro Thr Thr Arg Ser Ser Ala Arg Arg
 1860 1865 1870
 Ser Gln Ala Gly Val Ser Ser Gly Ala Pro Pro Gly Arg Asn Ser Phe
 1875 1880 1885
 Tyr Met Gly Thr Cys Gln Asp Glu Pro Glu Gln Leu Asp Asp Trp Asn
 1890 1895 1900
 Arg Ile Ala Glu Leu Gln Gln Arg Asn Arg Val Cys Pro Pro His Leu
 1905 1910 1915 1920
 Lys Thr Cys Tyr Pro Leu Glu Ser Arg Pro Ser Leu Ser Leu Gly Thr
 1925 1930 1935
 Ile Thr Asp Glu Met Lys Thr Gly Asp Pro Gln Glu Thr Leu Arg
 1940 1945 1950
 Arg Ala Ser Met Gln Pro Ile Gln Ile Ala Glu Gly Thr Gly Ile Thr
 1955 1960 1965
 Thr Arg Gln Gln Arg Lys Arg Val Ser Leu Glu Pro His Gln Gly Pro
 1970 1975 1980

Gly Thr Pro Glu Ser Lys Lys Ala Thr Ser Cys Phe Pro Arg Pro Met
 1985 1990 1995 2000
 Thr Pro Arg Asp Arg His Glu Gly Arg Lys Gln Ser Thr Thr Glu Ala
 2005 2010 2015
 Gln Lys Lys Ala Ala Pro Ala Ser Thr Lys Gln Ala Asp Arg Arg Gln
 2020 2025 2030
 Ser Met Ala Phe Ser Ile Leu Asn Thr Pro Lys Lys Leu Gly Asn Ser
 2035 2040 2045
 Leu Leu Arg Arg Gly Ala Ser Lys Lys Ala Leu Ser Lys Ala Ser Pro
 2050 2055 2060
 Asn Thr Arg Ser Gly Thr Arg Arg Ser Pro Arg Ile Ala Thr Thr Thr
 2065 2070 2075 2080
 Ala Ser Ala Ala Thr Ala Ala Ile Gly Ala Thr Pro Arg Ala Lys
 2085 2090 2095
 Gly Lys Ala Lys His
 2100

<210> 33
 <211> 2115
 <212> PRT
 <213> Human

<400> 33

Met Thr Leu His Ala Thr Arg Gly Ala Ala Leu Leu Ser Trp Val Asn
 1 5 10 15
 Ser Leu His Val Ala Asp Pro Val Glu Ala Val Leu Gln Leu Gln Asp
 20 25 30
 Cys Ser Ile Phe Ile Lys Ile Ile Asp Arg Ile His Gly Thr Glu Glu
 35 40 45
 Gly Gln Gln Ile Leu Lys Gln Pro Val Ser Glu Arg Leu Asp Phe Val
 50 55 60
 Cys Ser Phe Leu Gln Lys Asn Arg Lys His Pro Ser Ser Pro Glu Cys
 65 70 75 80
 Leu Val Ser Ala Gln Lys Val Leu Glu Gly Ser Glu Leu Glu Leu Ala
 85 90 95
 Lys Met Thr Met Leu Leu Leu Tyr His Ser Thr Met Ser Ser Lys Ser
 100 105 110
 Pro Arg Asp Trp Glu Gln Phe Glu Tyr Lys Ile Gln Ala Glu Leu Ala
 115 120 125
 Val Ile Leu Lys Phe Val Leu Asp His Glu Asp Gly Leu Asn Leu Asn
 130 135 140
 Glu Asp Leu Glu Asn Phe Leu Gln Lys Ala Pro Val Pro Ser Thr Cys
 145 150 155 160
 Ser Ser Thr Phe Pro Glu Glu Leu Ser Pro Pro Ser His Gln Ala Lys
 165 170 175
 Arg Glu Ile Arg Phe Leu Glu Leu Gln Lys Val Ala Ser Ser Ser Ser
 180 185 190
 Gly Asn Asn Phe Leu Ser Gly Ser Pro Ala Ser Pro Met Gly Asp Ile
 195 200 205
 Leu Gln Thr Pro Gln Phe Gln Met Arg Arg Leu Lys Lys Gln Leu Ala
 210 215 220
 Asp Glu Arg Ser Asn Arg Asp Glu Leu Glu Leu Glu Leu Ala Glu Asn
 225 230 235 240
 Arg Lys Leu Leu Thr Glu Lys Asp Ala Gln Ile Ala Met Met Gln Gln
 245 250 255
 Arg Ile Asp Arg Leu Ala Leu Leu Asn Glu Lys Gln Ala Ala Ser Pro
 260 265 270
 Leu Glu Pro Lys Glu Leu Glu Glu Leu Arg Asp Lys Asn Glu Ser Leu
 275 280 285
 Thr Met Arg Leu His Glu Thr Leu Lys Gln Cys Gln Asp Leu Lys Thr
 290 295 300
 Glu Lys Ser Gln Met Asp Arg Lys Ile Asn Gln Leu Ser Glu Glu Asn

305	310	315	320
Gly Asp Leu Ser Phe	Lys Leu Arg Glu	Phe Ala Ser His Leu	Gln Gln
325	330	335	
Leu Gln Asp Ala	Leu Asn Glu	Leu Thr Glu Glu His Ser	Lys Ala Thr
340	345	350	
Gln Glu Trp Leu	Glu Lys Gln	Ala Gln Leu Glu Lys	Glu Leu Ser Ala
355	360	365	
Ala Leu Gln Asp	Lys Lys Cys	Leu Glu Glu Lys Asn	Glu Ile Leu Gln
370	375	380	
Gly Lys Leu Ser Gln	Leu Glu Glu His	Leu Ser Gln Leu Gln Asp	Asn
385	390	395	400
Pro Pro Gln Glu	Lys Gly Glu	Val Leu Gly Asp Val	Leu Gln Leu Glu
405	410	415	
Thr Leu Lys Gln	Glu Ala Ala	Thr Leu Ala Ala Asn	Asn Thr Gln Leu
420	425	430	
Gln Ala Arg Val	Glu Met Leu	Glu Thr Glu Arg	Gly Gln Gln Glu Ala
435	440	445	
Lys Leu Leu Ala	Glu Arg Gly	His Phe Glu Glu	Glu Lys Gln Gln Leu
450	455	460	
Ser Ser Leu Ile	Thr Asp Leu	Gln Ser Ser	Ile Ser Asn Leu Ser Gln
465	470	475	480
Ala Lys Glu Glu	Leu Glu Gln	Ala Ser Gln	Ala His Gly Ala Arg Leu
485	490	495	
Thr Ala Gln Val	Ala Ser Leu	Thr Ser Glu	Leu Leu Thr Thr Leu Asn Ala
500	505	510	
Thr Ile Gln Gln	Gln Asp Gln	Glu Leu Ala	Gly Leu Lys Gln Gln Ala
515	520	525	
Lys Glu Lys Gln	Ala Gln	Leu Ala Gln	Thr Leu Gln Gln Gln Glu Gln
530	535	540	
Ala Ser Gln Gly	Leu Arg His	Gln Val Glu	Gln Leu Ser Ser Ser Leu
545	550	555	560
Lys Gln Lys Glu	Gln Gln	Leu Lys Glu	Val Ala Glu Lys Gln Glu Ala
565	570	575	
Thr Arg Gln Asp	His Ala Gln	Gln Leu Ala	Thr Ala Ala Glu Glu Arg
580	585	590	
Glu Ala Ser	Leu Arg Glu	Arg Asp Ala	Ala Leu Lys Gln Leu Glu Ala
595	600	605	
Leu Glu Lys Glu	Lys Ala Ala	Lys Leu Glu	Ile Leu Gln Gln Gln Leu
610	615	620	
Gln Val Ala Asn	Glu Ala Arg	Asp Ser Ala	Gln Thr Ser Val Thr Gln
625	630	635	640
Ala Gln Arg Glu	Lys Ala Glu	Leu Ser Arg	Lys Val Glu Glu Leu Gln
645	650	655	
Ala Cys Val Glu	Thr Ala Arg	Gln Glu Gln His	Glu Ala Gln Ala Gln
660	665	670	
Val Ala Glu	Leu Glu	Leu Gln Leu Arg	Ser Glu Gln Gln Lys Ala Thr
675	680	685	
Glu Lys Glu Arg	Val Ala Gln	Glu Lys Asp Gln	Leu Gln Glu Gln Leu
690	695	700	
Gln Ala Leu Lys	Glu Ser	Leu Lys Val	Thr Lys Gly Ser Leu Glu Glu
705	710	715	720
Glu Lys Arg Arg	Ala Ala Asp	Ala Leu Glu	Glu Gln Gln Arg Cys Ile
725	730	735	
Ser Glu Leu Lys	Ala Glu Thr	Arg Ser Leu Val	Glu Gln His Lys Arg
740	745	750	
Glu Arg Lys Glu	Leu Glu Glu	Glu Arg Ala Gly	Arg Lys Gly Leu Glu
755	760	765	
Ala Arg Leu Gln	Gln Leu Gly	Glu Ala His	Gln Ala Glu Thr Glu Val
770	775	780	
Leu Arg Arg Glu	Leu Ala Glu	Ala Met Ala	Ala Gln His Thr Ala Glu
785	790	795	800
Ser Glu Cys Glu	Gln Leu Val	Lys Glu Val	Ala Ala Trp Arg Glu Arg

805	810	815
Tyr Glu Asp Ser Gln Gln Glu Glu Ala Gln	Tyr Gly Ala Met Phe Gln	
820	825	830
Glu Gln Leu Met Thr Leu Lys Glu Glu Cys Glu Lys Ala Arg Gln Glu		
835	840	845
Leu Gln Glu Ala Lys Glu Lys Val Ala Gly Ile Glu Ser His Ser Glu		
850	855	860
Leu Gln Ile Ser Arg Gln Gln Asn Glu Leu Ala Glu Leu His Ala Asn		
865	870	875
Leu Ala Arg Ala Leu Gln Gln Val Gln Glu Lys Glu Val Arg Ala Gln		880
885	890	895
Lys Leu Ala Asp Asp Leu Ser Thr Leu Gln Glu Lys Met Ala Ala Thr		
900	905	910
Ser Lys Glu Val Ala Arg Leu Glu Thr Leu Val Arg Lys Ala Gly Glu		
915	920	925
Gln Gln Glu Thr Ala Ser Arg Glu Leu Val Lys Glu Pro Ala Arg Ala		
930	935	940
Gly Asp Arg Gln Pro Glu Trp Leu Glu Glu Gln Gln Gly Arg Gln Phe		
945	950	955
Cys Ser Thr Gln Ala Ala Leu Gln Ala Met Glu Arg Glu Ala Glu Gln		960
965	970	975
Met Gly Asn Glu Leu Glu Arg Leu Arg Ala Ala Leu Met Glu Ser Gln		
980	985	990
Gly Gln Gln Glu Glu Arg Gly Gln Gln Glu Arg Glu Val Ala Arg		
995	1000	1005
Leu Thr Gln Glu Arg Gly Arg Ala Gln Ala Asp Leu Ala Leu Glu Lys		
1010	1015	1020
Ala Ala Arg Ala Glu Leu Glu Met Arg Leu Gln Asn Ala Leu Asn Glu		
1025	1030	1035
Gln Arg Val Glu Phe Ala Thr Leu Gln Glu Ala Leu Ala His Ala Leu		1040
1045	1050	1055
Thr Glu Lys Glu Gly Lys Asp Gln Glu Leu Ala Lys Leu Arg Gly Leu		
1060	1065	1070
Glu Ala Ala Gln Ile Lys Glu Leu Glu Glu Leu Arg Gln Thr Val Lys		
1075	1080	1085
Gln Leu Lys Glu Gln Leu Ala Lys Lys Glu Lys Glu His Ala Ser Gly		
1090	1095	1100
Ser Gly Ala Gln Ser Glu Ala Ala Gly Arg Thr Glu Pro Thr Gly Pro		
1105	1110	1115
Lys Leu Glu Ala Leu Arg Ala Glu Val Ser Lys Leu Glu Gln Gln Cys		1120
1125	1130	1135
Gln Lys Gln Gln Glu Gln Ala Asp Ser Leu Glu Arg Ser Leu Glu Ala		
1140	1145	1150
Glu Arg Ala Ser Arg Ala Glu Arg Asp Ser Ala Leu Glu Thr Leu Gln		
1155	1160	1165
Gly Gln Leu Glu Glu Lys Ala Gln Glu Leu Gly His Ser Gln Ser Ala		
1170	1175	1180
Leu Ala Ser Ala Gln Arg Glu Leu Ala Ala Phe Arg Thr Lys Val Gln		
1185	1190	1195
Asp His Ser Lys Ala Glu Asp Glu Trp Lys Ala Gln Val Ala Arg Gly		1200
1205	1210	1215
Arg Gln Glu Ala Glu Arg Lys Asn Ser Leu Ile Ser Ser Leu Glu Glu		
1220	1225	1230
Glu Val Ser Ile Leu Asn Arg Gln Val Leu Glu Lys Glu Gly Glu Ser		
1235	1240	1245
Lys Glu Leu Lys Arg Leu Val Met Ala Glu Ser Glu Lys Ser Gln Lys		
1250	1255	1260
Leu Glu Glu Arg Leu Arg Leu Leu Gln Ala Glu Thr Ala Ser Asn Ser		
1265	1270	1275
Ala Arg Ala Ala Glu Arg Ser Ser Ala Leu Arg Glu Glu Val Gln Ser		1280
1285	1290	1295
Leu Arg Glu Glu Ala Glu Lys Gln Arg Val Ala Ser Glu Asn Leu Arg		

1300	1305	1310
Gln Glu Leu Thr Ser Gln Ala Glu Arg Ala Glu Glu	Leu Gly Gln Glu	
1315	1320	1325
Leu Lys Ala Trp Gln Glu Lys Phe Phe Gln Lys Glu	Gln Ala Leu Ser	
1330	1335	1340
Thr Leu Gln Leu Glu His Thr Ser Thr Gln Ala Leu Val	Ser Glu Leu	
1345	1350	1355
Leu Pro Ala Lys His Leu Cys Gln Gln Leu Gln Ala Glu	Gln Ala Ala	
1365	1370	1375
Ala Glu Lys Arg His Arg Glu Glu Leu Glu Gln Ser Lys	Gln Ala Ala	
1380	1385	1390
Gly Gly Leu Arg Ala Glu Leu Leu Arg Ala Gln Arg Glu	Leu Gly Glu	
1395	1400	1405
Leu Ile Pro Leu Arg Gln Lys Val Ala Glu Gln Glu Arg	Thr Ala Gln	
1410	1415	1420
Gln Leu Arg Ala Glu Lys Ala Ser Tyr Ala Glu Gln Leu	Ser Met Leu	
1425	1430	1435
Lys Lys Ala His Gly Leu Leu Ala Glu Glu Asn Arg Gly	Leu Gly Glu	
1445	1450	1455
Arg Ala Asn Leu Gly Arg Gln Phe Leu Glu Val Glu Leu	Asp Gln Ala	
1460	1465	1470
Arg Glu Lys Tyr Val Gln Glu Leu Ala Ala Val Arg Ala	Asp Ala Glu	
1475	1480	1485
Thr Arg Leu Ala Glu Val Gln Arg Glu Ala Gln Ser Thr	Ala Arg Glu	
1490	1495	1500
Leu Glu Val Met Thr Ala Lys Tyr Glu Gly Ala Lys Val	Lys Val Lys Val	
1505	1510	1515
Glu Glu Arg Gln Arg Phe Gln Glu Glu Arg Gln Lys Leu	Thr Ala Gln	
1525	1530	1535
Val Glu Gln Leu Glu Val Phe Gln Arg Glu Gln Thr Lys	Gln Val Glu	
1540	1545	1550
Glu Leu Ser Lys Lys Leu Ala Asp Ser Asp Gln Ala Ser	Lys Val Gln	
1555	1560	1565
Gln Gln Lys Leu Lys Ala Val Gln Ala Gln Gly Glu Ser	Gln Gln Gln	
1570	1575	1580
Glu Ala Gln Arg Leu Gln Ala Gln Leu Asn Glu Leu Gln	Ala Gln Leu	
1585	1590	1595
Ser Gln Lys Glu Gln Ala Ala Glu His Tyr Lys Leu Gln	Met Glu Lys	
1605	1610	1615
Ala Lys Thr His Tyr Asp Ala Lys Lys Gln Gln Asn Gln	Glu Leu Gln	
1620	1625	1630
Glu Gln Leu Arg Ser Leu Glu Gln Leu Gln Lys Glu Asn	Lys Glu Leu	
1635	1640	1645
Arg Ala Glu Ala Glu Arg Leu Gly His Glu Leu Gln Gln	Ala Gly Leu	
1650	1655	1660
Lys Thr Lys Glu Ala Glu Gln Thr Cys Arg His Leu Thr	Ala Gln Val	
1665	1670	1675
Arg Ser Leu Glu Ala Gln Val Ala His Ala Asp Gln Gln	Leu Arg Asp	
1685	1690	1695
Leu Gly Lys Phe Gln Val Ala Thr Asp Ala Leu Lys Ser	Arg Glu Pro	
1700	1705	1710
Gln Ala Lys Pro Gln Leu Asp Leu Ser Ile Asp Ser	Leu Asp Leu Ser	
1715	1720	1725
Cys Glu Glu Gly Thr Pro Leu Ser Ile Thr Ser Lys Leu	Pro Arg Thr	
1730	1735	1740
Gln Pro Asp Gly Thr Ser Val Pro Gly Glu Pro Ala Ser	Pro Ile Ser	
1745	1750	1755
Gln Arg Leu Pro Pro Lys Val Glu Ser Leu Glu Ser Leu	Tyr Phe Thr	
1765	1770	1775
Pro Ile Pro Ala Arg Ser Gln Ala Pro Leu Glu Ser Ser	Leu Asp Ser	
1780	1785	1790
Leu Gly Asp Val Phe Gln Asp Ser Gly Arg Lys Thr Arg	Ser Ala Arg	

1795	1800	1805	
Arg Arg Thr Thr Gln Ile Ile Asn Ile Thr Met Thr	Lys Lys Leu Asp		
1810	1815	1820	
Val Glu Glu Pro Asp Ser Ala Asn Ser Ser	Phe Tyr Ser Thr Arg Ser		
1825	1830	1835	1840
Ala Pro Ala Ser Gln Ala Ser Leu Arg Ala Thr Ser Ser Thr Gln Ser			
1845	1850		1855
Leu Ala Arg Leu Gly Ser Pro Asp Tyr Gly Asn Ser Ala Leu Leu Ser			
1860	1865	1870	
Leu Pro Gly Tyr Arg Pro Thr Thr Arg Ser Ser Ala Arg Arg Ser Gln			
1875	1880	1885	
Ala Gly Val Ser Ser Gly Ala Pro Pro Gly Arg Asn Ser Phe Tyr Met			
1890	1895	1900	
Gly Thr Cys Gln Asp Glu Pro Glu Gln Leu Asp Asp Trp Asn Arg Ile			
1905	1910	1915	1920
Ala Glu Leu Gln Gln Arg Asn Arg Val Cys Pro Pro His Leu Lys Thr			
1925	1930		1935
Cys Tyr Pro Leu Glu Ser Arg Pro Ser Leu Ser Leu Gly Thr Ile Thr			
1940	1945	1950	
Asp Glu Glu Met Lys Thr Gly Asp Pro Gln Glu Thr Leu Arg Arg Ala			
1955	1960	1965	
Ser Met Gln Pro Ile Gln Ile Ala Glu Gly Thr Gly Ile Thr Thr Arg			
1970	1975	1980	
Gln Gln Arg Lys Arg Val Ser Leu Glu Pro His Gln Gly Pro Gly Thr			
1985	1990	1995	2000
Pro Glu Ser Lys Lys Ala Thr Ser Cys Phe Pro Arg Pro Met Thr Pro			
2005	2010		2015
Arg Asp Arg His Glu Gly Arg Lys Gln Ser Thr Thr Glu Ala Gln Lys			
2020	2025	2030	
Lys Ala Ala Pro Ala Ser Thr Lys Gln Ala Asp Arg Arg Gln Ser Met			
2035	2040	2045	
Ala Phe Ser Ile Leu Asn Thr Pro Lys Lys Leu Gly Asn Ser Leu Leu			
2050	2055	2060	
Arg Arg Gly Ala Ser Lys Lys Ala Leu Ser Lys Ala Ser Pro Asn Thr			
2065	2070	2075	2080
Arg Ser Gly Thr Arg Arg Ser Pro Arg Ile Ala Thr Thr Thr Ala Ser			
2085	2090		2095
Ala Ala Thr Ala Ala Ile Gly Ala Thr Pro Arg Ala Lys Gly Lys			
2100	2105	2110	
Ala Lys His			
2115			

<210> 34
 <211> 4096
 <212> PRT
 <213> Human

<220>
 <221> VARIANT
 <222> (1)...(4096)
 <223> Xaa = Any Amino Acid

<400> 34
 Met Ala Gly Ser Gly Ala Gly Val Arg Cys Ser Leu Leu Arg Leu Gln
 1 5 10 15
 Glu Thr Leu Ser Ala Ala Asp Arg Cys Gly Ala Ala Leu Ala Gly His
 20 25 30
 Gln Leu Ile Arg Gly Leu Gly Gln Glu Cys Val Leu Ser Ser Ser Pro
 35 40 45
 Ala Val Leu Ala Leu Gln Thr Ser Leu Val Phe Ser Arg Asp Phe Gly
 50 55 60
 Leu Leu Val Phe Val Arg Lys Ser Leu Asn Ser Ile Glu Phe Arg Glu

65	70	75	80
Cys	Arg	Glu	Glu
Ile	Leu	Lys	Phe
Leu	Cys	Ile	Phe
85	80	95	95
Gly	Gln	Lys	Ile
Ala	Pro	Tyr	Ser
100	105	105	110
Ser	Val	Tyr	Thr
115	120	120	125
Asp	Leu	Leu	Ile
Leu	Lys	Lys	Lys
130	135	135	140
Asp	Glu	Phe	Lys
Ile	Gly	Glu	Leu
145	150	155	160
Ala	Leu	Lys	Lys
Ile	Pro	Asp	Thr
165	170	170	175
Leu	Leu	Gly	Leu
Gly	Leu	Gly	Val
180	185	185	190
Ala	Glu	Asn	Leu
Phe	Arg	Ala	Phe
195	200	200	205
Thr	Ser	Ala	Val
Arg	Glu	Pro	Lys
210	215	215	220
Lys	Gly	Leu	Ser
Ser	Ser	Leu	Leu
225	230	235	240
Asp	Pro	Gln	Thr
Ser	Arg	Glu	Ile
245	250	250	255
Arg	Pro	Gln	Ile
Asp	Leu	Lys	Arg
260	265	265	270
Arg	Leu	Phe	Ala
Leu	His	Ala	Ser
275	280	280	285
Asn	Tyr	Val	Ser
Leu	Phe	Glu	Val
290	295	300	
Asn	Val	Glu	Leu
Lys	Lys	Lys	Ala
305	310	315	320
Lys	Gln	Val	Ser
Asn	Met	Val	Ala
325	330	330	335
Lys	Leu	Gln	Tyr
Tyr	Glu	Met	Glu
340	345	345	350
Asp	Ser	Asn	Asn
Lys	Glu	Leu	Ser
355	360	360	365
Phe	Ala	Gly	Pro
Cys	Lys	Val	Ile
370	375	380	
Tyr	Val	Glu	Leu
Ile	Gln	Arg	Cys
385	390	395	400
Asp	Thr	Gly	Asp
Tyr	Arg	Val	Tyr
405	410	410	415
Val	Ala	Ser	Val
Leu	Leu	Tyr	Leu
420	425	425	430
Pro	Val	Leu	Glu
435	440	440	445
Tyr	Ser	Pro	Lys
Met	Gln	Leu	Val
450	455	460	
Phe	Leu	Ala	Leu
465	470	475	480
Thr	Val	Val	His
Gln	Gly	Leu	Ile
485	490	490	495
Leu	Pro	Lys	Gly
500	505	505	510
Glu	Val	Arg	Thr
515	520	520	525
Asp	Leu	Phe	Arg
His	Leu	Leu	Ser
530	535	535	540
Leu	Ala	Asp	Glu
545	550	555	560
Asn	His	Leu	Tyr
Leu	Glu	Phe	Val
555	560	560	
Asp	Glu	Leu	Lys
560	565	565	
Asn	Val	Leu	Lys
570	575	575	
Asp	Glu	Ile	Val

	565	570	575												
Glu	Lys	Leu	Asp	Leu	Thr	Leu	Glu	Ile	Gln	Thr	Val	Gly	Glu	Gln	Glu
		580			585							590			
Asn	Gly	Asp	Glu	Ala	Pro	Gly	Val	Trp	Met	Ile	Pro	Thr	Ser	Asp	Pro
		595			600							605			
Ala	Ala	Asn	Leu	His	Pro	Ala	Lys	Pro	Lys	Asp	Phe	Ser	Ala	Phe	Ile
		610			615							620			
Asn	Leu	Val	Glu	Phe	Cys	Arg	Glu	Ile	Leu	Pro	Glu	Lys	Gln	Ala	Glu
		625			630						635			640	
Phe	Phe	Glu	Pro	Trp	Val	Tyr	Ser	Phe	Ser	Tyr	Glu	Leu	Ile	Leu	Gln
		645			650						655				
Ser	Thr	Arg	Leu	Pro	Leu	Ile	Ser	Gly	Phe	Tyr	Lys	Leu	Leu	Ser	Ile
		660			665						670				
Thr	Val	Arg	Asn	Ala	Lys	Lys	Ile	Lys	Tyr	Phe	Glu	Gly	Val	Ser	Pro
		675			680						685				
Lys	Ser	Leu	Lys	His	Ser	Pro	Glu	Asp	Pro	Glu	Lys	Tyr	Ser	Cys	Phe
		690			695						700				
Ala	Leu	Phe	Val	Lys	Phe	Gly	Lys	Glu	Val	Ala	Val	Lys	Met	Lys	Gln
		705			710						715			720	
Tyr	Lys	Asp	Glu	Leu	Leu	Ala	Ser	Cys	Leu	Thr	Phe	Leu	Leu	Ser	Leu
		725			730						735				
Pro	His	Asn	Ile	Ile	Glu	Leu	Asp	Val	Arg	Ala	Tyr	Val	Pro	Ala	Leu
												740	745		750
Gln	Met	Ala	Phe	Lys	Leu	Gly	Leu	Ser	Tyr	Thr	Pro	Leu	Ala	Glu	Val
												755	760		765
Gly	Leu	Asn	Ala	Leu	Glu	Glu	Trp	Ser	Ile	Tyr	Ile	Asp	Arg	His	Val
											770	775		780	
Met	Gln	Pro	Tyr	Tyr	Lys	Asp	Ile	Leu	Pro	Cys	Leu	Asp	Gly	Tyr	Leu
											785	790		795	
Lys	Thr	Ser	Ala	Leu	Ser	Asp	Glu	Thr	Lys	Asn	Asn	Trp	Glu	Val	Ser
											805	810		815	
Ala	Leu	Ser	Arg	Ala	Ala	Gln	Lys	Gly	Phe	Asn	Lys	Val	Val	Leu	Lys
											820	825		830	
His	Leu	Lys	Lys	Thr	Lys	Asn	Leu	Ser	Ser	Asn	Glu	Ala	Ile	Ser	Leu
											835	840		845	
Glu	Glu	Ile	Arg	Ile	Arg	Val	Val	Gln	Met	Leu	Gly	Ser	Leu	Gly	Gly
											850	855		860	
Gln	Ile	Asn	Lys	Asn	Leu	Leu	Thr	Val	Thr	Ser	Ser	Asp	Glu	Met	Met
											865	870		880	
Lys	Ser	Tyr	Val	Ala	Trp	Asp	Arg	Glu	Lys	Arg	Leu	Ser	Phe	Ala	Val
											885	890		895	
Pro	Phe	Arg	Glu	Met	Lys	Pro	Val	Ile	Phe	Leu	Asp	Val	Phe	Leu	Pro
											900	905		910	
Arg	Val	Thr	Glu	Leu	Ala	Leu	Thr	Ala	Ser	Asp	Arg	Gln	Thr	Lys	Val
											915	920		925	
Ala	Ala	Cys	Glu	Leu	Leu	His	Ser	Met	Val	Met	Phe	Met	Leu	Gly	Lys
											930	935		940	
Ala	Thr	Gln	Met	Pro	Glu	Gly	Gly	Gln	Gly	Ala	Pro	Pro	Met	Tyr	Gln
											945	950		955	
Leu	Tyr	Lys	Arg	Thr	Phe	Pro	Val	Leu	Leu	Arg	Leu	Ala	Cys	Asp	Val
											965	970		975	
Asp	Gln	Val	Thr	Arg	Gln	Leu	Tyr	Glu	Pro	Leu	Val	Met	Gln	Leu	Ile
											980	985		990	
His	Trp	Phe	Thr	Asn	Asn	Lys	Lys	Phe	Glu	Ser	Gln	Asp	Thr	Val	Ser
											995	1000		1005	
Leu	Leu	Glu	Ala	Ile	Leu	Asp	Gly	Ile	Val	Asp	Pro	Val	Asp	Ser	Thr
											1010	1015		1020	
Leu	Arg	Asp	Phe	Cys	Gly	Arg	Cys	Ile	Arg	Glu	Phe	Leu	Lys	Trp	Ser
											1025	1030		1035	
Ile	Lys	Gln	Ile	Thr	Pro	Gln	Gln	Glu	Lys	Ser	Pro	Val	Asn	Thr	
											1045	1050		1055	
Lys	Ser	Leu	Phe	Lys	Arg	Leu	Tyr	Ser	Leu	Ala	Leu	His	Pro	Asn	Ala

1060	1065	1070	
Phe Lys Arg Leu Gly Ala Ser Leu Ala Phe Asn Asn Ile	Tyr Arg Glu		
1075	1080	1085	
Phe Arg Glu Glu Glu Ser Leu Val Glu Gln Phe Val Phe	Glu Ala Leu		
1090	1095	1100	
Val Ile Tyr Met Glu Ser Leu Ala Leu Ala His Ala Asp	Glu Lys Ser		
1105	1110	1115	1120
Leu Gly Thr Ile Gln Gln Cys Cys Asp Ala Ile Asp His	Leu Cys Arg		
1125	1130	1135	
Ile Ile Glu Lys Lys His Val Ser Leu Asn Lys Ala Lys	Lys Arg Arg		
1140	1145	1150	
Leu Pro Arg Gly Phe Pro Pro Ser Ala Ser Leu Cys Leu	Leu Asp Leu		
1155	1160	1165	
Val Lys Trp Leu Leu Ala His Cys Gly Arg Pro Gln Thr	Glu Cys Arg		
1170	1175	1180	
His Lys Ser Ile Glu Leu Phe Tyr Lys Phe Val Pro Leu	Leu Pro Gly		
1185	1190	1195	1200
Asn Arg Ser Pro Asn Leu Trp Leu Lys Asp Val Leu Lys	Glu Gly		
1205	1210	1215	
Val Ser Phe Leu Ile Asn Thr Phe Glu Gly Gly Cys	Gly Gln Pro		
1220	1225	1230	
Ser Gly Ile Leu Ala Gln Pro Thr Leu Leu Tyr Leu Arg	Gly Pro Phe		
1235	1240	1245	
Ser Leu Gln Ala Thr Leu Cys Trp Leu Asp Leu Leu Ala	Leu Ala Leu		
1250	1255	1260	
Glu Cys Tyr Asn Thr Phe Ile Gly Glu Arg Thr Val Gly	Ala Leu Gln		
1265	1270	1275	1280
Val Leu Gly Thr Glu Ala Gln Ser Ser Leu Leu Lys Ala	Val Ala Phe		
1285	1290	1295	
Phe Leu Glu Ser Ile Ala Met His Asp Ile Ile Ala Ala	Glu Lys Cys		
1300	1305	1310	
Phe Gly Thr Gly Ala Ala Gly Asn Arg Thr Ser Pro Gln	Glu Gly Glu		
1315	1320	1325	
Arg Tyr Asn Tyr Ser Lys Cys Thr Val Val Val Arg Ile	Met Glu Phe		
1330	1335	1340	
Thr Thr Thr Leu Leu Asn Thr Ser Pro Glu Gly Trp Lys	Leu Leu Lys		
1345	1350	1355	1360
Lys Asp Leu Cys Asn Thr His Leu Met Arg Val Leu Val	Gln Thr Leu		
1365	1370	1375	
Cys Glu Pro Ala Ser Ile Gly Phe Asn Ile Gly Asp Val	Gln Val Met		
1380	1385	1390	
Ala His Leu Pro Asp Val Cys Val Asn Leu Met Lys Ala	Leu Lys Met		
1395	1400	1405	
Ser Pro Tyr Lys Asp Ile Leu Glu Thr His Leu Arg Glu	Lys Ile Thr		
1410	1415	1420	
Ala Gln Ser Ile Glu Glu Leu Cys Ala Val Asn Leu Tyr	Gly Pro Asp		
1425	1430	1435	1440
Ala Gln Val Asp Arg Ser Arg Leu Ala Ala Val Val Ser	Ala Cys Lys		
1445	1450	1455	
Gln Leu His Arg Ala Gly Leu Leu His Asn Ile Leu Pro	Ser Gln Ser		
1460	1465	1470	
Thr Asp Leu His His Ser Val Gly Thr Glu Leu Leu Ser	Leu Val Tyr		
1475	1480	1485	
Lys Gly Ile Ala Pro Gly Asp Glu Arg Gln Cys Leu Pro	Ser Leu Asp		
1490	1495	1500	
Leu Ser Cys Lys Gln Leu Ala Ser Gly Leu Leu Glu Leu	Ala Phe Ala		
1505	1510	1515	1520
Phe Gly Gly Leu Cys Glu Arg Leu Val Ser Leu Leu Leu	Asn Pro Ala		
1525	1530	1535	
Val Leu Ser Thr Ala Ser Leu Gly Ser Ser Gln Gly Ser	Val Ile His		
1540	1545	1550	
Phe Ser His Gly Glu Tyr Phe Tyr Ser Leu Phe Ser Glu	Thr Ile Asn		

1555	1560	1565	
Thr Glu Leu Leu Lys Asn Leu Asp Leu Ala Val Leu	Glu Leu Met Gln		
1570	1575	1580	
Ser Ser Val Asp Asn Thr Lys Met Val Ser Ala Val Leu Asn Gly Met			
1585	1590	1595	1600
Leu Asp Gln Ser Phe Arg Glu Arg Ala Asn Gln Lys His Gln Gly Leu			
1605	1610	1615	
Lys Leu Ala Thr Thr Ile Leu Gln His Trp Lys Lys Cys Asp Ser Trp			
1620	1625	1630	
Trp Ala Lys Asp Ser Pro Leu Glu Thr Lys Met Ala Val Leu Ala Leu			
1635	1640	1645	
Leu Ala Lys Ile Leu Gln Ile Asp Ser Ser Val Ser Phe Asn Thr Ser			
1650	1655	1660	
His Gly Ser Phe Pro Glu Val Phe Thr Thr Tyr Ile Ser Leu Leu Ala			
1665	1670	1675	1680
Asp Thr Lys Leu Asp Leu His Leu Lys Gly Gln Ala Val Thr Leu Leu			
1685	1690	1695	
Pro Phe Phe Thr Ser Leu Thr Gly Gly Ser Leu Glu Glu Leu Arg Arg			
1700	1705	1710	
Val Leu Glu Gln Leu Ile Val Ala His Phe Pro Met Gln Ser Arg Glu			
1715	1720	1725	
Phe Pro Pro Gly Thr Pro Arg Phe Asn Asn Tyr Val Asp Cys Met Lys			
1730	1735	1740	
Lys Phe Leu Asp Ala Leu Glu Leu Ser Gln Ser Pro Met Leu Leu Glu			
1745	1750	1755	1760
Leu Met Thr Glu Val Leu Cys Arg Glu Gln Gln His Val Met Glu Glu			
1765	1770	1775	
Leu Phe Gln Ser Ser Phe Arg Arg Ile Ala Arg Arg Gly Ser Cys Val			
1780	1785	1790	
Thr Gln Val Gly Leu Leu Glu Ser Val Tyr Glu Met Phe Arg Lys Asp			
1795	1800	1805	
Asp Pro Arg Leu Ser Phe Thr Arg Gln Ser Phe Val Asp Arg Ser Leu			
1810	1815	1820	
Leu Thr Leu Leu Trp His Cys Ser Leu Asp Ala Leu Arg Glu Phe Phe			
1825	1830	1835	1840
Ser Thr Ile Val Val Asp Ala Ile Asp Val Leu Lys Ser Arg Phe Thr			
1845	1850	1855	
Lys Leu Asn Glu Ser Thr Phe Asp Thr Gln Ile Thr Lys Lys Met Gly			
1860	1865	1870	
Tyr Tyr Ile Leu Asp Val Met Tyr Ser Arg Leu Pro Lys Asp Asp			
1875	1880	1885	
Val His Ala Lys Glu Ser Lys Ile Asn Gln Val Phe His Gly Ser Cys			
1890	1895	1900	
Ile Thr Glu Gly Asn Glu Leu Thr Lys Thr Leu Ile Lys Leu Cys Tyr			
1905	1910	1915	1920
Asp Ala Phe Thr Glu Asn Met Ala Gly Glu Asn Gln Leu Leu Glu Arg			
1925	1930	1935	
Arg Arg Leu Tyr His Cys Ala Ala Tyr Asn Cys Ala Ile Ser Val Ile			
1940	1945	1950	
Cys Cys Val Phe Asn Glu Leu Lys Phe Tyr Gln Gly Phe Leu Phe Ser			
1955	1960	1965	
Glu Lys Pro Glu Lys Asn Leu Leu Ile Phe Glu Asn Leu Ile Asp Leu			
1970	1975	1980	
Lys Arg Arg Tyr Asn Phe Pro Val Glu Val Glu Val Pro Met Glu Arg			
1985	1990	1995	2000
Lys Lys Lys Tyr Ile Glu Ile Arg Lys Glu Ala Arg Glu Ala Ala Asn			
2005	2010	2015	
Gly Asp Ser Asp Gly Pro Ser Tyr Met Ser Ser Leu Ser Tyr Leu Ala			
2020	2025	2030	
Asp Ser Thr Leu Ser Glu Glu Met Ser Gln Phe Asp Phe Ser Thr Gly			
2035	2040	2045	
Val Gln Ser Tyr Ser Tyr Ser Gln Asp Pro Arg Pro Ala Thr Gly			

2050	2055	2060													
Arg	Phe	Arg	Arg	Arg	Glu	Gln	Arg	Asp	Pro	Thr	Val	His	Asp	Asp	Val
2065					2070					2075					2080
Leu	Glu	Leu	Glu	Met	Asp	Glu	Leu	Asn	Arg	His	Glu	Cys	Met	Ala	Pro
															2085
Leu	Thr	Ala	Leu	Val	Lys	His	Met	His	Arg	Ser	Leu	Gly	Pro	Pro	Gln
															2100
Gly	Glu	Glu	Asp	Ser	Val	Pro	Arg	Asp	Leu	Pro	Ser	Trp	Met	Lys	Phe
															2115
Leu	His	Gly	Lys	Leu	Gly	Asn	Pro	Ile	Val	Pro	Leu	Asn	Ile	Arg	Leu
															2130
Phe	Leu	Leu	Ala	Lys	Leu	Val	Ile	Asn	Thr	Glu	Glu	Val	Phe	Arg	Pro
															2145
Ala	Lys	His	Trp	Leu	Ser	Pro	Leu	Leu	Gln	Leu	Ala	Ala	Ser	Glu	Asn
															2165
Asn	Gly	Gly	Gly	Ile	His	Tyr	Met	Val	Val	Glu	Ile	Val	Ala	Thr	
															2180
Ile	Leu	Ser	Trp	Thr	Gly	Leu	Ala	Thr	Pro	Thr	Gly	Val	Pro	Lys	Asp
															2195
Glu	Val	Leu	Ala	Asn	Arg	Leu	Leu	Asn	Phe	Leu	Met	Lys	His	Val	Phe
															2210
His	Pro	Lys	Arg	Ala	Val	Phe	Arg	His	Asn	Leu	Glu	Ile	Ile	Lys	Thr
															2225
Leu	Val	Glu	Cys	Trp	Lys	Asp	Cys	Leu	Ser	Ile	Pro	Tyr	Arg	Leu	Ile
															2245
Phe	Glu	Lys	Phe	Ser	Gly	Lys	Asp	Pro	Asn	Ser	Lys	Asp	Asn	Ser	Val
															2260
Gly	Ile	Gln	Leu	Leu	Gly	Ile	Val	Met	Ala	Asn	Asp	Leu	Pro	Pro	Tyr
															2275
Asp	Pro	Gln	Cys	Gly	Ile	Gln	Ser	Ser	Glu	Tyr	Phe	Gln	Ala	Leu	Val
															2290
Asn	Asn	Met	Ser	Phe	Val	Arg	Tyr	Lys	Glu	Val	Tyr	Ala	Ala	Ala	Ala
															2305
Glu	Val	Leu	Gly	Leu	Ile	Leu	Arg	Tyr	Val	Met	Glu	Arg	Lys	Asn	Ile
															2325
Leu	Glu	Glu	Ser	Leu	Cys	Glu	Leu	Val	Ala	Lys	Gln	Leu	Lys	Gln	His
															2340
Gln	Asn	Thr	Met	Glu	Asp	Lys	Phe	Ile	Val	Cys	Leu	Asn	Lys	Val	Thr
															2355
Lys	Ser	Phe	Pro	Pro	Leu	Ala	Asp	Arg	Phe	Met	Asn	Ala	Val	Phe	Phe
															2370
Leu	Leu	Pro	Lys	Phe	His	Gly	Val	Leu	Lys	Thr	Leu	Cys	Leu	Glu	Val
															2385
Val	Leu	Cys	Arg	Val	Glu	Gly	Met	Thr	Glu	Leu	Tyr	Phe	Gln	Leu	Lys
															2405
Ser	Lys	Asp	Phe	Val	Gln	Val	Met	Arg	His	Arg	Asp	Glu	Arg	Gln	Lys
															2420
Val	Cys	Leu	Asp	Ile	Ile	Tyr	Lys	Met	Met	Pro	Lys	Leu	Lys	Pro	Val
															2435
Glu	Leu	Arg	Glu	Leu	Leu	Asn	Pro	Val	Val	Glu	Phe	Val	Ser	His	Pro
															2450
Ser	Thr	Thr	Cys	Arg	Glu	Gln	Met	Tyr	Asn	Ile	Leu	Met	Trp	Ile	His
															2465
Asp	Asn	Tyr	Arg	Asp	Pro	Glu	Ser	Glu	Thr	Asp	Asn	Asp	Ser	Gln	Glu
															2485
Ile	Phe	Lys	Leu	Ala	Lys	Asp	Val	Leu	Ile	Gln	Gly	Leu	Ile	Asp	Glu
															2500
Asn	Pro	Gly	Leu	Gln	Leu	Ile	Ile	Arg	Asn	Phe	Trp	Ser	His	Glu	Thr
															2515
Arg	Leu	Pro	Ser	Asn	Thr	Leu	Asp	Arg	Leu	Leu	Ala	Leu	Asn	Ser	Leu
															2530
Tyr	Ser	Pro	Lys	Ile	Glu	Val	His	Phe	Leu	Ser	Leu	Ala	Thr	Asn	Phe
															2535
															2540

2545	2550	2555	2560
Leu	Leu	Glu	Met
2565		2570	2575
Glu	His	Pro	Leu
2580	Ser	Glu	Cys
Asp	Trp	Arg	Phe
2595	Arg	Ser	Arg
Gln	Ala	Ala	Ser
2610	Ser	Trp	Arg
2615	Arg	Pro	Val
2620	Trp	Ala	Gly
2625	Ala	Gly	Gln
2630	Gly	Gln	Ile
2635	Arg	Ile	Arg
2640	Ala	Thr	Ala
2645	Thr	Gln	Asp
2650	Gln	Thr	Gly
2655	Arg	Arg	Arg
2660	Ser	Ser	Ser
2665	Thr	Thr	Phe
2670	Asp	Asp	Asp
2675	Ser	Leu	Phe
2680	Asp	Leu	Ala
2685	Gly	Thr	Asp
2690	Arg	Gly	Pro
2695	Pro	Leu	Asp
2700	Lys	Ser	Phe
2705	Gly	Val	Glu
2710	Leu	Asp	Asn
2715	Asp	Asn	Lys
2720	Asn	Val	Gly
2725	Lys	Lys	Ala
2730	Gly	Gly	Ala
2735	Arg	Arg	Gly
2740	Thr	Arg	Arg
2745	Asp	Leu	Arg
2750	Asp	Arg	Arg
2755	Leu	Arg	Phe
2760	Arg	Arg	Met
2765	Asp	Arg	Arg
2770	Leu	Asp	Asp
2775	Tyr	Leu	Leu
2780	Arg	Asp	Asp
2785	Ser	Ser	Leu
2790	Leu	Thr	Pro
2795	Ile	Leu	Leu
2800	Ala	Gln	Gln
2805	Arg	Asp	Asp
2810	Asp	Leu	Leu
2815	Ile	Phe	Ser
2820	Ile	Ser	Ser
2825	Asp	Glu	Lys
2830	Phe	Lys	Asn
2835	Lys	Thr	Asn
2840	Asp	Asn	Ile
2845	Phe	Thr	Gly
2850	Pro	Phe	Asp
2855	Pro	Val	Ile
2860	Phe	Gly	Gln
2865	Leu	Ile	Asp
2870	Leu	Arg	Pro
2875	Ser	Leu	Ala
2880	Gly	Gly	Gly
2885	Ile	Ile	Leu
2890	Arg	Arg	Glu
2895	Leu	Leu	Glu
2900	Leu	Leu	Ala
2905	Pro	Pro	Leu
2910	Ala	Ala	Gly
2915	Arg	Arg	Cys
2920	Leu	Leu	Leu
2925	Arg	Arg	Leu
2930	Tyr	Arg	Leu
2935	Ser	Ile	Gly
2940	Gly	Gly	Gly
2945	Thr	Thr	Gly
2950	Lys	Gln	Ile
2955	Gln	Ile	Thr
2960	Ser	Asp	Gly
2965	Ala	Pro	Asp
2970	Ala	Ala	Val
2975	Lys	Asp	Asn
2980	Gln	Asp	Asn
2985	Asp	Trp	Val
2990	Trp	Val	Asp
2995	Glu	Asp	Gly
3000	Leu	Glu	Glu
3005	Ala	Ala	Ala
3010	Ser	Leu	Gly
3015	Leu	Asp	Asn
3020	Asp	Asn	Asn
3025	Leu	Ile	Asn
3030	Glu	Trp	Trp
3035	Tyr	Ser	Pro
3040	Asp	Glu	Gly
3045	Tyr	Asp	Gly
3050	Met	Ile	Arg
3055	Tyr	Arg	Ser
3060	Pro	Ile	Lys
3065	Tyr	Leu	Leu
3070	Leu	Leu	Gly
3075	Gly	Leu	Leu
3080	Ala	Gly	Ala

3045	3050	3055
Asp Gln Ser Leu Leu Thr Phe Ile Asp Lys Ala Met His Gly Glu Leu		
3060	3065	3070
Gln Lys Ala Ile Leu Glu Leu His Tyr Ser Gln Glu Leu Ser Leu Leu		
3075	3080	3085
Tyr Leu Leu Gln Asp Asp Val Asp Arg Ala Lys Tyr Tyr Ile Gln Asn		
3090	3095	3100
Gly Ile Gln Ser Phe Met Gln Asn Tyr Ser Ser Ile Asp Val Leu Leu		
3105	3110	3115
His Gln Ser Arg Leu Thr Lys Leu Gln Ser Val Gln Ala Leu Thr Glu		
3125	3130	3135
Ile Gln Glu Phe Ile Ser Phe Ile Ser Lys Gln Gly Asn Leu Ser Ser		
3140	3145	3150
Gln Val Pro Leu Lys Arg Leu Leu Asn Thr Trp Thr Asn Arg Tyr Pro		
3155	3160	3165
Asp Ala Lys Met Asp Pro Met Asn Ile Trp Asp Asp Ile Ile Thr Asn		
3170	3175	3180
Arg Cys Phe Phe Leu Ser Lys Ile Glu Glu Lys Leu Thr Pro Leu Pro		
3185	3190	3195
Glu Asp Asn Ser Met Asn Val Asp Gln Asp Gly Asp Pro Ser Asp Arg		
3205	3210	3215
Met Glu Val Gln Glu Glu Glu Asp Ile Ser Ser Leu Ile Arg Ser		
3220	3225	3230
Cys Lys Phe Ser Met Lys Met Lys Met Ile Asp Ser Ala Arg Lys Gln		
3235	3240	3245
Asn Asn Phe Ser Leu Ala Met Lys Leu Leu Lys Glu Leu His Lys Glu		
3250	3255	3260
Ser Lys Thr Arg Asp Asp Trp Leu Val Ser Trp Val Gln Ser Tyr Cys		
3265	3270	3275
Arg Leu Ser His Cys Arg Ser Arg Ser Gln Gly Cys Ser Glu Gln Val		
3285	3290	3295
Leu Thr Val Leu Lys Thr Val Ser Leu Leu Asp Glu Asn Asn Val Ser		
3300	3305	3310
Ser Tyr Leu Xaa Lys Asn Ile Leu Ala Phe Arg Asp Gln Asn Ile Leu		
3315	3320	3325
Leu Gly Thr Thr Tyr Arg Ile Ile Ala Asn Ala Leu Ser Ser Glu Pro		
3330	3335	3340
Ala Cys Leu Ala Glu Ile Glu Glu Asp Lys Ala Arg Arg Ile Leu Glu		
3345	3350	3355
Leu Ser Gly Ser Ser Ser Glu Asp Ser Glu Lys Val Ile Ala Gly Leu		
3365	3370	3375
Tyr Gln Arg Ala Phe Gln His Leu Ser Glu Ala Val Gln Ala Ala Glu		
3380	3385	3390
Glu Glu Ala Gln Pro Pro Ser Trp Ser Cys Gly Pro Ala Ala Gly Val		
3395	3400	3405
Ile Asp Ala Tyr Met Thr Leu Ala Asp Phe Cys Asp Gln Gln Leu Arg		
3410	3415	3420
Lys Glu Glu Glu Asn Ala Ser Val Thr Asp Ser Ala Glu Leu Gln Ala		
3425	3430	3435
Tyr Pro Ala Leu Val Val Glu Lys Met Leu Lys Ala Leu Lys Leu Asn		
3445	3450	3455
Ser Asn Glu Ala Arg Leu Lys Phe Pro Arg Leu Leu Gln Ile Ile Glu		
3460	3465	3470
Arg Tyr Pro Glu Glu Thr Leu Ser Leu Met Thr Lys Glu Ile Ser Ser		
3475	3480	3485
Val Pro Cys Trp Gln Phe Ile Ser Trp Ile Ser His Met Val Ala Leu		
3490	3495	3500
Leu Asp Lys Asp Gln Ala Val Ala Val Gln His Ser Val Glu Glu Ile		
3505	3510	3515
Thr Asp Asn Tyr Pro Gln Ala Ile Val Tyr Pro Phe Ile Ile Ser Ser		
3525	3530	3535
Glu Ser Tyr Ser Phe Lys Asp Thr Ser Thr Gly His Lys Asn Lys Glu		

3540	3545	3550
Phe Val Ala Arg Ile Lys Ser Lys	Leu Asp Gln Gly	Gly Val Ile Gln
3555	3560	3565
Asp Phe Ile Asn Ala Leu Asp Gln	Leu Ser Asn Pro	Glu Leu Leu Phe
3570	3575	3580
Lys Asp Trp Ser Asn Asp Val Arg	Ala Glu Leu Ala Lys	Thr Pro Val
3585	3590	3595
Asn Lys Lys Asn Ile Glu Lys Met	Tyr Glu Arg Met	Tyr Ala Ala Leu
3605	3610	3615
Gly Asp Pro Lys Ala Pro Gly	Leu Gly Ala Phe Arg	Arg Lys Phe Ile
3620	3625	3630
Gln Thr Phe Gly Lys Glu Phe Asp	Lys His Phe Gly	Lys Gly Gly Ser
3635	3640	3645
Lys Leu Leu Arg Met Lys	Leu Ser Asp Phe Asn	Asp Ile Thr Asn Met
3650	3655	3660
Leu Leu Leu Lys Met Asn	Lys Asp Ser Lys	Pro Pro Gly Asn Leu Lys
3665	3670	3675
Glu Cys Ser Pro Trp Met Ser Asp	Phe Lys Val Glu Phe	Leu Arg Asn
3685	3690	3695
Glu Leu Glu Ile Pro Gly Gln	Tyr Asp Gly Arg	Gly Lys Pro Leu Pro
3700	3705	3710
Glu Tyr His Val Arg Ile Ala	Gly Phe Asp Glu Arg	Val Thr Val Met
3715	3720	3725
Ala Ser Leu Arg Arg Pro Lys	Arg Ile Ile Arg	Gly His Asp Glu
3730	3735	3740
Arg Glu His Pro Phe Leu Val	Lys Gly Glu Asp	Leu Arg Gln Asp
3745	3750	3755
Gln Arg Val Glu Gln	Leu Phe Gln Val	Met Asn Gly Ile Leu Ala Gln
3765	3770	3775
Asp Ser Ala Cys Ser Gln	Arg Ala Leu Gln	Leu Arg Thr Tyr Ser Val
3780	3785	3790
Val Pro Met Thr Ser Ser Asp	Pro Arg Ala Pro	Pro Cys Glu Tyr Lys
3795	3800	3805
Asp Trp Leu Thr Lys Met	Ser Gly Lys His	Asp Val Gly Ala Tyr Met
3810	3815	3820
Leu Met Tyr Lys Gly	Ala Asn Arg Thr	Glu Thr Val Thr Ser Glu Arg
3825	3830	3835
Lys Arg Glu Ser Lys Val	Pro Ala Asp	Leu Leu Lys Arg Ala Phe Val
3845	3850	3855
Arg Met Ser Thr Ser Pro	Glu Ala Phe	Leu Ala Leu Arg Ser His Phe
3860	3865	3870
Ala Ser Ser His Ala Leu	Ile Cys Ile Ser His	Trp Ile Leu Gly Ile
3875	3880	3885
Gly Asp Arg His Leu Asn	Asn Phe Met Val	Ala Met Glu Thr Gly Gly
3890	3895	3900
Val Ile Gly Ile Asp	Phe Gly His Ala Phe	Gly Ser Ala Thr Gln Phe
3905	3910	3915
Leu Pro Val Pro Glu	Leu Met Pro	Phe Arg Leu Thr Arg Gln Phe Ile
3925	3930	3935
Asn Leu Met Leu Pro Met	Lys Glu Thr	Gly Leu Met Tyr Ser Ile Met
3940	3945	3950
Val His Ala Leu Arg	Ala Phe Arg	Ser Asp Pro Gly Leu Leu Thr Asn
3955	3960	3965
Thr Met Asp Val Phe	Val Lys Glu Pro	Ser Phe Asp Trp Lys Asn Phe
3970	3975	3980
Glu Gln Lys Met Leu	Lys Lys Gly	Gly Ser Trp Ile Gln Glu Ile Asn
3985	3990	3995
Val Ala Glu Lys Asn	Trp Tyr Pro	Arg Gln Lys Ile Cys Tyr Ala Lys
4005	4010	4015
Arg Lys Leu Ala Gly	Ala Asn Pro	Ala Val Ile Thr Cys Asp Glu Leu
4020	4025	4030
Leu Leu Gly His	Glu Lys Ala Pro	Ala Phe Arg Asp Tyr Val Ala Val

4035	4040	4045
Ala Arg Gly Ser Lys Asp His Asn Ile Arg Ala Gln	Glu Pro Glu Ser	
4050	4055	4060
Gly Leu Ser Glu Glu Thr Gln Val Lys Cys Ile Met Asp Gln Ala Thr		
4065	4070	4075
Asp Pro Asn Ile Leu Gly Arg Thr Trp Glu Gly Trp Glu Pro Trp Met		4080
4085	4090	4095

<210> 35
<211> 1014
<212> PRT
<213> Human

<400> 35			
Met Ala Glu Ser Ser Asp Lys Leu Tyr Arg Val Glu Tyr Ala Lys Ser			
1	5	10	15
Gly Arg Ala Ser Cys Lys Lys Cys Ser Glu Ser Ile Pro Lys Asp Ser			
20	25	30	
Leu Arg Met Ala Ile Met Val Gln Ser Pro Met Phe Asp Gly Lys Val			
35	40	45	
Pro His Trp Tyr His Phe Ser Cys Phe Trp Lys Val Gly His Ser Ile			
50	55	60	
Arg His Pro Asp Val Glu Val Asp Gly Phe Ser Glu Leu Arg Trp Asp			
65	70	75	80
Asp Gln Gln Lys Val Lys Lys Thr Ala Glu Ala Gly Gly Val Thr Gly			
85	90	95	
Lys Gly Gln Asp Gly Ile Gly Ser Lys Ala Glu Lys Thr Leu Gly Asp			
100	105	110	
Phe Ala Ala Glu Tyr Ala Lys Ser Asn Arg Ser Thr Cys Lys Gly Cys			
115	120	125	
Met Glu Lys Ile Glu Lys Gly Gln Val Arg Leu Ser Lys Lys Met Val			
130	135	140	
Asp Pro Glu Lys Pro Gln Leu Gly Met Ile Asp Arg Trp Tyr His Pro			
145	150	155	160
Gly Cys Phe Val Lys Asn Arg Glu Glu Leu Gly Phe Arg Pro Glu Tyr			
165	170	175	
Ser Ala Ser Gln Leu Lys Gly Phe Ser Leu Leu Ala Thr Glu Asp Lys			
180	185	190	
Glu Ala Leu Lys Lys Gln Leu Pro Gly Val Lys Ser Glu Gly Lys Arg			
195	200	205	
Lys Gly Asp Glu Val Asp Gly Val Asp Glu Val Ala Lys Lys Lys Ser			
210	215	220	
Lys Lys Glu Lys Asp Lys Asp Ser Lys Leu Glu Lys Ala Leu Lys Ala			
225	230	235	240
Gln Asn Asp Leu Ile Trp Asn Ile Lys Asp Glu Leu Lys Lys Val Cys			
245	250	255	
Ser Thr Asn Asp Leu Lys Glu Leu Leu Ile Phe Asn Lys Gln Gln Val			
260	265	270	
Pro Ser Gly Glu Ser Ala Ile Leu Asp Arg Val Ala Asp Gly Met Val			
275	280	285	
Phe Gly Ala Leu Leu Pro Cys Glu Glu Cys Ser Gly Gln Leu Val Phe			
290	295	300	
Lys Ser Asp Ala Tyr Tyr Cys Thr Gly Asp Val Thr Ala Trp Thr Lys			
305	310	315	320
Cys Met Val Lys Thr Gln Thr Pro Asn Arg Lys Glu Trp Val Thr Pro			
325	330	335	
Lys Glu Phe Arg Glu Ile Ser Tyr Leu Lys Lys Leu Lys Val Lys Lys			
340	345	350	
Gln Asp Arg Ile Phe Pro Pro Glu Thr Ser Ala Ser Val Ala Ala Thr			
355	360	365	
Pro Pro Pro Ser Thr Ala Ser Ala Pro Ala Ala Val Asn Ser Ser Ala			
370	375	380	

Ser Ala Asp Lys Pro Leu Ser Asn Met Lys Ile Leu Thr Leu Gly Lys
 385 390 395 400
 Leu Ser Arg Asn Lys Asp Glu Val Lys Ala Met Ile Glu Lys Leu Gly
 405 410 415
 Gly Lys Leu Thr Gly Thr Ala Asn Lys Ala Ser Leu Cys Ile Ser Thr
 420 425 430
 Lys Lys Glu Val Glu Lys Met Asn Lys Lys Met Glu Glu Val Lys Glu
 435 440 445
 Ala Asn Ile Arg Val Val Ser Glu Asp Phe Leu Gln Asp Val Ser Ala
 450 455 460
 Ser Thr Lys Ser Leu Gln Glu Leu Phe Leu Ala His Ile Leu Ser Pro
 465 470 475 480
 Trp Gly Ala Glu Val Lys Ala Glu Pro Val Glu Val Val Ala Pro Arg
 485 490 495
 Gly Lys Ser Gly Ala Ala Leu Ser Lys Lys Ser Lys Gly Gln Val Lys
 500 505 510
 Glu Glu Gly Ile Asn Lys Ser Glu Lys Arg Met Lys Leu Thr Leu Lys
 515 520 525
 Gly Gly Ala Ala Val Asp Pro Asp Ser Gly Leu Glu His Ser Ala His
 530 535 540
 Val Leu Glu Lys Gly Lys Val Phe Ser Ala Thr Leu Gly Leu Val
 545 550 555 560
 Asp Ile Val Lys Gly Thr Asn Ser Tyr Tyr Lys Leu Gln Leu Leu Glu
 565 570 575
 Asp Asp Lys Glu Asn Arg Tyr Trp Ile Phe Arg Ser Trp Gly Arg Val
 580 585 590
 Gly Thr Val Ile Gly Ser Asn Lys Leu Glu Gln Met Pro Ser Lys Glu
 595 600 605
 Asp Ala Ile Glu His Phe Met Lys Leu Tyr Glu Glu Lys Thr Gly Asn
 610 615 620
 Ala Trp His Ser Lys Asn Phe Thr Lys Tyr Pro Lys Lys Phe Tyr Pro
 625 630 635 640
 Leu Glu Ile Asp Tyr Gly Gln Asp Glu Glu Ala Val Lys Lys Leu Thr
 645 650 655
 Val Asn Pro Gly Thr Lys Ser Lys Leu Pro Lys Pro Val Gln Asp Leu
 660 665 670
 Ile Lys Met Ile Phe Asp Val Glu Ser Met Lys Lys Ala Met Val Glu
 675 680 685
 Tyr Glu Ile Asp Leu Gln Lys Met Pro Leu Gly Lys Leu Ser Lys Arg
 690 695 700
 Gln Ile Gln Ala Ala Tyr Ser Ile Leu Ser Glu Val Gln Gln Ala Val
 705 710 715 720
 Ser Gln Gly Ser Ser Asp Ser Gln Ile Leu Asp Leu Ser Asn Arg Phe
 725 730 735
 Tyr Thr Leu Ile Pro His Asp Phe Gly Met Lys Lys Pro Pro Leu Leu
 740 745 750
 Asn Asn Ala Asp Ser Val Gln Ala Lys Val Glu Met Leu Asp Asn Leu
 755 760 765
 Leu Asp Ile Glu Val Ala Tyr Ser Leu Leu Arg Gly Gly Ser Asp Asp
 770 775 780
 Ser Ser Lys Asp Pro Ile Asp Val Asn Tyr Glu Lys Leu Lys Thr Asp
 785 790 795 800
 Ile Lys Val Val Asp Arg Asp Ser Glu Glu Ala Glu Ile Ile Arg Lys
 805 810 815
 Tyr Val Lys Asn Thr His Ala Thr Thr His Asn Ala Tyr Asp Leu Glu
 820 825 830
 Val Ile Asp Ile Phe Lys Ile Glu Arg Glu Gly Glu Cys Gln Arg Tyr
 835 840 845
 Lys Pro Phe Lys Gln Leu His Asn Arg Arg Leu Leu Trp His Gly Ser
 850 855 860
 Arg Thr Thr Asn Phe Ala Gly Ile Leu Ser Gln Gly Leu Arg Ile Ala
 865 870 875 880

Pro Pro Glu Ala Pro Val Thr Gly Tyr Met Phe Gly Lys Gly Ile Tyr
 885 890 895
 Phe Ala Asp Met Val Ser Lys Ser Ala Asn Tyr Cys His Thr Ser Gln
 900 905 910
 Gly Asp Pro Ile Gly Leu Ile Leu Leu Gly Glu Val Ala Leu Gly Asn
 915 920 925
 Met Tyr Glu Leu Lys His Ala Ser His Ile Ser Lys Leu Pro Lys Gly
 930 935 940
 Lys His Ser Val Lys Gly Leu Gly Lys Thr Thr Pro Asp Pro Ser Ala
 945 950 955 960
 Asn Ile Ser Leu Asp Gly Val Asp Val Pro Leu Gly Thr Gly Ile Ser
 965 970 975
 Ser Gly Val Asn Asp Thr Ser Leu Leu Tyr Asn Glu Tyr Ile Val Tyr
 980 985 990
 Asp Ile Ala Gln Val Asn Leu Lys Tyr Leu Leu Lys Leu Lys Phe Asn
 995 1000 1005
 Phe Lys Thr Ser Leu Trp
 1010

AA1
INS
FI

<210> 36
 <211> 4
 <212> PRT
 <213> Human

<400> 36
 Val Gly Pro Asp
 1

<210> 37
 <211> 5
 <212> PRT
 <213> Human

<400> 37
 Ile Ser Ala Asp Glu
 1 5